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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,085	01/22/2004	Giuseppe Di Fabrizio	2002-0354	6404
26652 7590 02/04/2009				
AT&T CORP. ROOM 2A207 ONE AT&T WAY BEDMINSTER, NJ 07921				
EXAMINER SHAH, PARAS D				
ART UNIT PAPER NUMBER				
2626				
MAIL DATE DELIVERY MODE				
02/04/2009 PAPER				

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/763,085

**Applicant(s)**

DI FABBRIZIO ET AL.

**Examiner**

PARAS SHAH

**Art Unit**

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is in response to the Arguments and Amendments filed on 11/24/2008. Claims 1-21 are pending and have been examined. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance.
2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-21 have been considered but they are not persuasive.

In regards to the 35 USC 112, 1<sup>st</sup> paragraph rejection, the Applicants argue that paragraphs [0034] along with Figure 2C "clearly teach the concept of assigning a lowest common ancestor node of all lit nodes as a new focus node and wherein the new focus node is different from the current focus node" and thus have sufficient support in the disclosure. The Examiner respectfully disagrees. The stated paragraph [0034] along with the Figure 2C does not restrict the focus node being different as being claimed. Although the Figure 2C shows a different focus node, the difference is shown by mere example but not supported in paragraph [0034], which describes the Figure 2C. In lines 9-12 of paragraph [0034], a lowest common ancestor node is determined when there is no direct descendent and sets a focus node. The paragraph [0034] does not restrict the focus node being different. In fact, the definition given by the specification for the new

focus node is broadly written and clearly defined as being the lowest common ancestor of all lit nodes. Hence, the rejection is maintained.

In regards to the Applicants argument that the Office Action relies upon the success of the 112 rejection. Such statement is respectfully traversed by the Examiner. The Examiner explicitly considered the new limitation that was added in the claims by utilization of the tertiary reference of Norton et al. as stated in the Non-Final Office Action dated 07/22/2008, in pages 6 and 7. Thus, the rejection is maintains and the respective limitation has been considered and is shown in the numerated items below.

Further, in response to the Applicant's request for clarification. The discussion of "Young et al." should be Chinn et al. as the Chinn et al. reference is discussed and referred to throughout the rejections and is addresses in the rejection.

### ***Claim Objections***

4. Claim 18 is objected to because of the following informalities: "computer readable instructions for instructing a computing device to perform" should be changed to "computer readable instructions that instructs a computing device to perform". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 5, 10, 14, and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of "wherein the new focus node is different from the current focus node" is not described in Specification as originally filed on 01/22/2004. Specifically in the Specification, paragraph [0034], lines 10-15. In this paragraph, there is no restriction as to whether the focus node is different but rather the allocation of the lowest common ancestor node.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 5 and 14 are rejected under 35 U.S.C. 101 because the claims appear to be directed to a software embodiment and not to a hardware embodiment, where a machine claim is directed towards a system, apparatus, or arrangement. The claim appears to be directed towards an application as stated in the published application, paragraph [0005], where the dialog manager is a module in a system and in paragraph [0041], the spoken dialog service and dialog spoken dialog service are applications. Hence, the dialog manager can be interpreted to be a component of the application service, resulting in the dialog manager being software as well. The dialog manager and spoken dialogue service are not directed to the statutory category of system,

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arrangement, or apparatus but relate to merely program or software. Thus, the claim is directed to software and is non-statutory. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See e.g., *Warmerdam*, 33 F.3d at 1361, 31, USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between data and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Claims 6-9 and 15-17 are rejected for being dependent upon rejected base claim.

Claims 10-14 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the method for controlling dialog flow method including steps of gathering, lighting, generalizing, and analyzing is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of "gathering", "lighting", "generalizing, or "assigning" to limit the steps to the electronic form of the " gathering of input from a user," and the claim language itself is sufficiently broad to read on human receiving utterances from another users, mentally stepping through the lighting, generalizing, and assigning the specific nodes using a pen and paper based on the received utterances.

Claims 5 and 10 are rejected under 35 U.S.C. 101 because the claims recite an abstract idea, whose steps that do not, in themselves, produce a "useful, concrete, and tangible result", and thus, are not directed to a practical application nor does the claim result in a physical transformation of a given input. In order to be considered statutory, the claimed invention as a whole must be useful and accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. In the present case, an abstract idea is presented regarding the lighting, generalizing and assigning of nodes is not what produces a "useful, concrete, and tangible result" in the present invention. However, claims 6, 7, 11, and 12 do present limitations that produce a "useful, concrete, and tangible result". The dependent claims recite the prompting of the user for disambiguation.

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***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinn *et al.* (US 2003/0115289) in view of Fratkin (US 2001/0049688) in view of Norton *et al.* (US6,510,411).

As to claims 1, 14, and 18 Chinn *et al.* discloses a disambiguation method (see [0099], disambiguation of San Francisco pertaining to Weather or Traffic) in a spoken dialog service that identifies a user need the disambiguation method being associated with a rooted tree (see Figure 2), the method comprising:

(a) based on a received user utterance in response to a prompt (see [0097], user asks a question), establishing at least one lit node and assigning a current focus (see [0057], root node).

(b) if there is a single direct descendent of the focus node that is lit (see Figure 2, if the user wants portfolio information then this would be a focus node 2., which is a direct descendent from root node 1.0).

(1) assigning the lit direct descendent of the current focus node as a new focus node (see Figure 2, and [0057], if the user selected the



portfolio then this would become the focus node and prompt more questions).;

(2) if the new focus node is a leaf node, identifying the user need (see Figure 2, If during traversal the focus node went from a current focus node 2.1 to a new focus node 3.1.3, the user information is identified and presented. Although not specifically disclosed in the reference. Such can be inferred as shown in a similar example as in [0097]-[0100])

(3) if the new focus node is not a leaf node, prompting the user to disambiguate between descendent nodes of the new focus node and returning to step (a) (see Figure 2 and [0057]-[0058]) (e.g. It can be interpreted from Figure 2, that since portfolio 2.1 is the focus node and is not a leaf node, then questions would be asked to the user to determine which information is to be extracted and presented.);

(c) if there are a plurality direct descendent of the current focus node that is lit (see Figure 2 and [0097]-[0100], San Francisco appears twice in the nodes).

(1) assigning a lowest common ancestor node of all lit nodes as a new focus node (see Figure 2, and [0100] and [0057]) (e.g. Since there is are multiple matches of the spoken input, the root node becomes the focus node so as to ask another question to the user for disambiguation. Further, the example given by Chinn in the cited sections teach an example of disambiguating between different concepts, which goes back

to the previous state depending on the traversal through the dialogue flow.);

(2) prompting the user for input to disambiguate between descendent nodes of the new focus node (see [0099]-[0100], system prompts user to disambiguate); and

(3) returning to step (a) (e.g. It is obvious that once the appropriate information is retrieved that the system will terminate or can go back for the next user (see Figure 3, END).

However, Chinn *et al.* does not specifically disclose step b although it can be inferred.

Fratkina *et al.* does teach the traversal in a rooted tree as recited in step b. (see [0291] and Figures 10-12) (e.g. The cited sections describe the traversal through a rooted tree. In Figure 10, the user specified eggs, the Breakfast node is the focus node and contains plurality of descendents. Based on the eggs, the user is prompted by the type of eggs. This switches the focus node to scrambled and since this is now a leaf node. The user's need has been determined ([0291]). Further Fratkina *et al.* teaches the use of lighting (see Figure 10-12, bolded ovals)

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the disambiguation method using a tree as taught by Chinn with the example tree and traversal as taught by Fratkina *et*

*al.* for the purpose of determining or identifying user need (see Fratkina *et al.* [0297]).

However, Chinn *et al.* in view of Fratkina *et al.* do not specifically teach the new focus node is different from the current focus node.

Norton does teach the new focus node that is different from the current focus node (see Figure 2B, roleset 215, 220, and roleset 211, where top level task 210 is previous focus node) (e.g. The teachings of Norton show the various types of task models for performing dialog in an IVR system. The example provided by Chinn shows a simple task model. However, it would have been obvious to use a more complicated task model as shown by Norton. Hence, the use of a complex task model to the example provided by Chinn would have enabled a new focus node to be assigned based on the level of the task and possible disambiguation that may be necessary as a result of multiple matches found as presented by Chinn in paragraphs [0099] and [0100]).

Because both Chinn in view of Fratkina and Norton teach method and system for conducting a dialog with a user, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have substituted the task model as taught by Norton with the disambiguation as taught by Chinn in view of Fratkina for the purpose of achieving the predictable result of moving a user through a dialog and to prevent ambiguity between terms (see Chinn *et al.* [0099]-[0100]) (see KSR v. TELEFLEX, MPEP 2141, III, Rationales B, D, and E).

As to claims 2, 3, 15, 16, 19, 20, Chinn *et al.* in view of Fratkina *et al.* in view of Norton *et al.* teach all of the limitations as in claim 1, above.

Furthermore, Chinn *et al.* teaches if after step (a), only one lit node exists that is not a direct descendent of the focus node, and the one lit node is a leaf node (see Figure 2 and [0097]) (e.g. If the user requested information for San Francisco weather.. San Francisco is not a direct descendent, but is a leaf) the method further comprises:

(d) identifying the user need according to the lit leaf node (see [0097], system determines that San Francisco pertains to weather and outputs information pertaining to the query (see Abstract, content of node is presented.)

As to claims 4, 17, and 21 Chinn *et al.* in view of Fratkina *et al.* in view of Norton *et al.* teach all of the limitations as in claim 1, above.

Furthermore, Fratkina *et al.* teaches wherein a first prompt to the user is associated with a root node of a rooted tree (see [0244] and [0297], trigger nodes cause new dialog goals to be generated for prompting user questions )

10. Claims 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abella *et al.* (US 6,044,347) in view of Young ("Dialog Structure and Plan Recognition in Spontaneous Spoken Dialog", 1993) in view of Norton *et al.*.

As to claims 5 and 10, Abella *et al.* discloses

a dialog manager within a spoken dialog service, the dialog manager operating according to a dialog disambiguation rooted tree, the rooted tree having a root node, nodes descending from the root nodes organized in categories and leaf nodes, the dialog manager performing the steps:

(a) gathering input from a user to match (see col. 4, lines 43-44), with at least one node and node condition, wherein a first prompt from the dialog manager relates to a focus root node(see col. 9, lines 41-44 and lines 50-67) (e.g. From the former cited section, a tree based approach is used by the dialog manager. The latter citation develops an example. The use of the lit nodes and focused nodes is implied by the reference when used with a tree based hierarchical structure. The example shows multiple occurrences of Atlantic City. The user is asked whether Atlantic City is a movie, which is a focus node, and the lit node being the movie and location headings as seen in Figure 4).

(b) lighting at least one relevant node according to the received user input (see col. 9, lines 41-44 and lines 50-67);

(c) generalizing by attempting to select a new focus node further from a current focus node (see col. 9, lines 41-44 and lines 50-67) by:

(2) assigning a lowest common ancestor node as a new focus node if there are multiple descendent nodes that are lit and step (c)(1) does not apply (see col. 9, lines 41-44 and lines 50-67) (e.g. From the example illustrated, since there are multiple descendent nodes with the information "Atlantic City" disambiguation procedure occurs, see Figure 4.);

However, Abella *et al.* does not specifically disclose the assigning of a focus node if it is a direct descendent of the focus node previously.

Young discloses,

(1) assigning a node as a new focus node if it is the only lit direct descendent of a focus node after step (see page 9, last paragraph) (e.g. The transition from one attribute to another regarding the pizza changes the focus of the dialog).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the dialogue management system using a tree based structure as taught by Abella *et al.* with the inclusion of focus node assignment as taught by Young. The motivation to have combined the two references involves the clarification of the attribute that is active (see Young, pages 7, sect. 4, last paragraph-page 8, lines 1-9 and last paragraph).

However, Abella *et al.* in view of Young do not specifically teach the new focus node is different from the current focus node.

Norton does teach the new focus node that is different from the current focus node (see Figure 2B, roleset 215, 220, and roleset 211, where top level task 210 is previous focus node) (e.g. The teachings of Norton show the various types of task models for performing dialog in an IVR system. Hence, the use of a complex task model to the example provided by Abella would have enabled a new focus node to be assigned based on the level of the task and possible disambiguation that may be necessary as a result of multiple matches found as presented by Abella in col. 9, lines 41-67).

Because both Abella *et al.* in view of Young and Norton teach method and system for conducting a dialog with a user, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the task model as taught by Norton with the disambiguation as taught by Abella *et al.* in view of Young for the purpose of achieving the predictable result of moving a user through a dialog and to prevent ambiguity between terms (see Abella *et al.*, col. 9, lines 41-44, 50-67)(see KSR v. TELEFLEX, MPEP 2141, III, Rationales B, D, and E).

As to claims 6 and 11, Abella *et al.* in view of Young further discloses

wherein step (c)(1) further comprises: if the new focus node is a leaf node, identifying the user need (see Young, sect. 4, 1st paragraph, and bullets 3-10) (e.g. The size of the pizza is determined where the size is the leaf node and requesting from the user size type desired); and if the new focus node is not a leaf node, prompting the user to disambiguate between descendent nodes of the new focus node and returning to step (b) (see Young, sect. 2.1, example, types of olives for toppings is requested from the user and disambiguation has taken place to determine which olives the user desires.);

As to claim 7, Abella *et al.* in view of Young further discloses

prompting the user for input to disambiguate between descendent nodes of the new focus node; and returning to step (b) (see Abella *et al.*, col. 9, lines 41-44 and lines 50-67).

As to claims. 8 and 12, Abella *et al.* in view of Young further discloses

if after step (b), only one lit node exists that is not a direct descendent of the focus node, and the one lit node is a leaf node (see Abella *et al.*, Figure and col. 9, lines 41-44 and lines 50-67) (e.g. From the cited portions, term "Atlantic City" is searched, which is not a direct descendent of the focus node, element 60 of Figure 4), the method further comprises: identifying the user need according to the lit leaf node (see Abella *et al.*, col. 9, lines 61) (e.g. The user is asked whether the term "Atlantic City" is a location or a movie title.).

As to claims 9 and 13, Abella *et al.* in view of Young further discloses

wherein if only one lit node exists that is not a direct descendent of the focus node and the one lit node is a leaf node, the method further comprises presenting information to the user regarding a condition of the lit leaf node (see Abella *et al.*, col. 9, lines 61) (e.g. The user is asked whether the term "Atlantic City" is a location or a movie title).



**Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:00a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. S./  
Examiner, Art Unit 2626

01/28/2009

/Patrick N. Edouard/  
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